

## ABSTRACT OF THE INVENTION

A method of producing metal fibers including melting a mixture of at least a fiber metal and a matrix metal, cooling the mixture to form a bulk matrix comprising at least a fiber phase and a matrix phase and removing at least a substantial portion of the matrix phase from the fiber phase. Additionally, the method may include deforming the bulk matrix.

In certain embodiments, the fiber metal may be at least one of niobium, a niobium alloy, tantalum and a tantalum alloy and the matrix metal may be at least one of copper and a copper alloy. The substantial portion of the matrix phase may be removed, in certain embodiments, by dissolving of the matrix phase in a suitable mineral acid, such as, but not limited to, nitric acid, sulfuric acid, hydrochloric acid and phosphoric acid.